

Phillip B Sharer

Electrical Engineering Specialist, Center for Transportation Research
Energy Systems Division (ES)
Argonne National Laboratory (ANL)

Educational Background:

Master of Science	Engineering, Purdue University Calumet, Hammond IN (May 2002)
Bachelor of Science	Electrical Engineering, Purdue University Calumet, Hammond IN (May 1998)

Professional Experience:

7/99-Present Electrical Engineering Specialist
Center for Transportation Research, ES Division

Developer and Co-Author of PSAT (Powertrain System Analysis Toolkit). Developed a series of innovative tools specifically oriented towards modeling and engineering advanced vehicles and their control strategies. Developed a unique set of tools to directly integrate test data from ANL advanced powertrain research facility (APRF) into Matlab for direct comparison with the simulated data. Developed unique techniques allowing PSAT to be one of the most flexible tools for vehicle modeling (i.e., more than 130 configurations are included, about 10 times more than any other tools). Demonstrated the accuracy of PSAT by validating the software at the vehicle and component level within 5% for fuel economy on several driving cycles. Wrote and validated a PSAT vehicle model of the Japanese Toyota Prius using test data from the APRF. Performed Well to Wheel Hybridization and Dieselization studies. Developed new control strategies for several advanced vehicle configurations. Conducted a 42 Volt study and Class 2B Truck Study for 21st Century Truck.

Guest Lecturer
Purdue University Calumet, Hammond IN
1998 - 2000

Taught sophomore level first and second semester courses in linear circuit analysis. Lectured, Responsible for assessing individual students performance in the class. Solely responsible for course structure. Wrote extensive lecture notes used by the class.

Taught laboratories for linear circuit analysis. Responsible for setting up the labs and communicating the concepts presented in the laboratories to students. Helped revise lab manual

Professional Society Activities:

Member of Society of Automotive Engineers

Awards

R&D 100 Award, 2004, PSAT, A. Rousseau, P. Sharer, S. Pagerit

Peer Reviewed Publications: (* indicates lead author)

- Unless otherwise noted, papers are 8-15 pages in length.
- All publications are to report findings of DOE-sponsored work

(Transactions) *Rousseau, A., Sharer, P., "Comparing Apples to Apples: Well-to-Wheel Analysis of Current ICE and Fuel Cell Vehicle Technologies", SAE paper 2004-01-1015, SAE World Congress, Detroit (March 2004).

*Rousseau, A., Sharer P., and Ahluwalia R., "Energy Storage Requirements for Fuel Cell Vehicles", SAE paper 2004-01-1302, SAE World Congress, Detroit (March 2004).

*Rousseau, A., Sharer P., and Besnier F., "Feasibility of Reusable Vehicle Modeling: Application to Hybrid Vehicle", SAE paper 2004-01-1618, SAE World Congress, Detroit (March 2004).

Besnier, F., Rousseau, A., Sharer, P., Monnet, G., Murphy, T. and Motloch C., "Analysis and Testing of Ultracapacitors in Hybrid Fuel Cell Applications", 20th Electric Vehicle Symposium, California (October 2004).

*Rousseau, A., Sharer, P., and Pasquier, M., "Validation Process of a System Analysis Model: PSAT," SAE paper 2001-01-0953, SAE World Congress, Detroit (March 2001).

Publications: Other Reports and Documents (* indicates lead author)

*Rousseau, A, Sharer, P., and Besnier, F., PSAT V5.2 Documentation (November 2003), 500 pages.

*Rousseau, A, Sharer, P., and Besnier, F., PSAT V5.1 Documentation (November 2002), 500 pages.

*Rousseau, A, Sharer, P., and Deville, B., PSAT V5.0 Documentation (November 2001), 350 pages.

Publications: Other Reports and Documents, (continued) (* indicates lead author)

*Sharer, P., A Validation Methodology for Drivetrain Models: The Integration of the Toyota Prius into a Systems Analysis Toolkit (May 2002). Thesis. Special Collections. Purdue University

*Sharer, P., and Rousseau, A., Potential Fuel Economy Improvements of Class 2B Vehicles from Dieselization to Hybridization based upon 21CT Partnership Program Goals using PSAT, DOE report (August 2001).

*Sharer, P., and Rousseau, A., Analysis of 42V System Fuel Economy Benefits From Stop and Go to Regenerative Braking and Electrical Assist, DOE report (April 2001).

*Rousseau, A, and Sharer, P., PSAT V4.1 Documentation (April 2001), 200 pages.

Sharer, P., and Rousseau, A., Validation of the Japan Toyota Prius Using PSAT, DOE report (March 2001).

Oral Presentations (speaker's name is underlined)

Sharer, P., *Comparing Apples to Apples: Well-to-Wheel Analysis of Current ICE and Fuel Cell Vehicle Technologies* SAE World Conference, Fuel Cell Power for Transportation Session (March 2004)

Sharer, P., *PSAT V5.2 Training Phase I & II – Use for Delphi HVAC and VVT Engine Engineering Teams at Argonne* (March 2004)

Sharer, P., *PSAT Capabilities Vehicles Presentation to Delphi at Argonne* (January 2004)

Sharer, P., *PSAT V5.2 Training Phase I – Use for FutureTruck 2003 Workshop in Detroit* (October 2003).

Sharer, P., *PSAT Capabilities for Series-Parallel Hybrids*, Argonne (June 2002)

Sharer, P., *Potential Fuel Economy Improvements of Class 2B Vehicles from Dieselization to Hybridization* ADVISOR-PSAT Users Conference at USCAR in Detroit (July 2002)

Sharer, P., *A Validation Methodology for Drivetrain Models: The Integration of the Toyota Prius into A Systems Analysis Toolkit*, Thesis Defense. Purdue University at Calumet. (May 2001)

Argonne Contractor Reports (* indicates lead author)

Sharer, P., Rousseau, A., The Japan Prius validation using PSAT, DOE report to Bob Kost (June 2001).